

REMARKS

This paper is being provided in response to the Office Action mailed April 30, 2009, for the above-referenced application. In this response, Applicant has cancelled claim 8 (claims 1-3, 5, 9-11 and 14 having been previously cancelled) without prejudice or disclaimer of the subject matter thereof, amended claims 4-7 and 12 and added new claims 15-18 to clarify that which Applicant considers to be the presently-claimed invention. Applicant respectfully submits that the amendments to the claims are fully supported by the originally-filed specification, consistent with the discussion herein.

As an initial matter, Applicant notes that the Office Action indicates that claims 4, 6-8 and 12 are pending and have been examined. However, Applicant points out that claims 4, 6-8, 12 and 13 were pending in the application per the Preliminary Amendment filed with the application on July 14, 2006. An examination of claim 13 appears to have been omitted.

The rejection of claims 4, 6 and 7 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,614,422 to Rafii, et al. (hereinafter "Rafii") in view of U.S. Patent No. 7,263,547 to Kloba (hereinafter "Kloba") is hereby traversed and reconsideration is respectfully requested in view of the amendments to the claims contained herein.

Independent claim 4, as amended herein, recites a mobile communication terminal including an image projection means for projecting one of a plurality of predefined operation-plane images that displays virtually an operation-plane of an operation device operated by users. Operation detection means detects operation on the operation-plane image projected by the

image projection means. Data processing means performs a predetermined data process based on the detection result of operation detected by the operation detection means. Application execution management means manages execution environment of an application program selected from a plurality of application programs that is downloaded via a mobile communication network. The image projection means projects an operation-plane image corresponding to recognition function designated by designation information received from the application execution management means, from among the plurality of predefined operation-plane images. The operation detection means has a plurality of kinds of mutually different recognition functions to recognize operation content by at least one of position, direction and movement of an operation object on the plurality of predefined operation-plane images, and detects operation on the operation-plane image by using the recognition function designated by designation information received from the application execution management means. Claims 12 and 13 depend directly or indirectly from independent claim 4.

Independent claim 6, as amended herein, recites a mobile communication terminal including an image projection means for projecting one of a plurality of predefined operation-plane images that displays virtually an operation-plane of an operation device operated by users. Operation detection means detects operation on the operation-plane image projected by the image projection means. Data processing means performs a predetermined data process based on the detection result of operation detected by the operation detection means. Application execution management means manages an execution environment of an application program selected from a plurality of application programs that is downloaded via a mobile communication network. The image projection means projects an operation-plane image

corresponding to recognition function designated by designation information received from the application execution management means, from among the plurality of predefined operation-plane images. The operation detection means has a plurality of kinds of mutually different recognition functions to recognize operation content by at least one of position, direction and movement of an operation object on the plurality of predefined operation-plane images, and detects operation on the operation-plane image by using the recognition function corresponding to the operation-plane image designated by designation information received from the application execution management means. Claims 12 and 13 depend directly or indirectly from independent claim 6.

Independent claim 7, as amended herein, recites a mobile communication terminal including an image projection means for projecting one of a plurality of predefined operation-plane images that displays virtually an operation-plane of an operation device operated by users. Operation detection means detects operation on the operation-plane image projected by the image projection means. Data processing means for performing a predetermined data process based on the detection result of operation detected by the operation detection means. Memory means for stores a plurality of image data corresponding to each one of the plurality of operation-plane images. Application execution management means executes an application program selected from a plurality of kinds of application programs that is downloaded via a mobile communication network. Instruction generation means generates an operation-plane image selection instruction in accordance with content of the selected application program. The image projection means selects an image data from the plurality of image data memorized in the memory based on the operation-plane image selection instruction generated by the instruction

generation means, and projects the operation-plane image of the selected image data. The application execution management means performs a data process corresponding to operation detected by the operation detection means in accordance with the content of the application program during execution of the selected application program. Claims 12 and 13 depend directly or indirectly from independent claim 7.

Rafii discloses a method and apparatus for entering data using a virtual input device. A user inputs digital data to a companion system using a virtual input device and a sensor captures three-dimensional positional information as to location of the user's fingers in relations to where keys would be on an actual keyboard. The Office Action cites principally to col. 4, lines 27-33, col. 7, lines 16-18, col. 10, lines 27-34 and col. 12, lines 33-47 and Figs. 1A and 3 of Rafii. The Office Action (page 3) notes that Rafii does not disclose an application execution management means for managing application program execution environment of an application program selected from a plurality of application programs that is downloaded via a mobile communication network.

Kloba discloses a system, method and computer program product for customizing channels, content and data for mobile devices. The Office Action cites to Kloba as disclosing the feature of an application execution management means noted above as omitted from Rafii, citing specifically to col. 4, lines 37-41 and col. 7, lines 5-9 of Kloba.

Applicant's independent claims have been amended to include the feature that the terminal projects one of a plurality of predefined operation-plane images. Support for this

amendment may be found throughout the originally-filed specification, in particular paragraphs 6, 9 and 51. Applicant's system, in accordance with the disclosure and the present claims, provides that a plurality of projected input layouts, namely predefined operation-plane images, are pre-programmed into a device. This provides that advantageous result that application developers do not need to design the whole input layout themselves, but instead may select one of the predefined operation-plane images as a pre-programmed input layout. By having the input layouts pre-programmed into the device, the application/applet developer does not need to design and integrate image layouts into their software, thus reducing the development time and complexity. This is especially advantageous for fast-to-market, low-cost mobile applications which predominantly have low development budgets and need a high degree of compatibility, reliability and ease of use.

Applicant respectfully submits that the cited prior art does not teach or fairly suggest at least Applicant's above-noted features. Specifically, Rafii fails to disclose at least the features of image projection means for projecting *one of a plurality of predefined operation-plane images* that displays virtually an operation-plane of an operation device operated by users. Rafii simply specifies that there is provided a ROM which holds the software to implement Rafii's method but does not suggest that the ROM, or any other memory means, stores pre-programmed projected input layouts, i.e. a plurality of predefined operation-plane images, resulting in one of those plurality of predefined operation-plane images being projected that displays virtually an operation-plane of an operation device operated by users, among other features, as recited by Applicant. Applicant refers to the discussion above concerning the advantages provided by Applicant's recited features.

Applicant also notes that the Office Action (page 3) recognizes that Rafii fails to teach an application execution management means for executing an application program selected from a plurality of kinds of application programs that is downloaded via a mobile communication network. The Office Action cites to Kloba for this purpose; however, Applicants respectfully submit that the addition of Kloba does not overcome the above-noted deficiencies of the Rafii reference with respect to Applicant's presently-claimed invention.

Specifically, Applicant notes that Applicant's application execution management feature is made a practical possibility by the feature of the plurality of predefined operation-plane images because the downloaded applications need not contain instructions for generating a custom operation-plane image on a communications terminal (which may well be device specific and therefore requiring multiple images), thereby significantly reducing the download file size. Accordingly, Applicant submits that the citation to an application execution management means in Kloba does not overcome the above-noted deficiencies of Rafii with respect to the use of a plurality of predefined operation-plane images by the mobile communications terminal according to that which is recited by Applicant. Specifically, even using an "application execution management means" from Kloba, neither Rafii nor Kloba then disclose, for example, at least the features that the image projection means projects an operation-plane image corresponding to recognition function designated by designation information received from the application execution management means, from among the plurality of predefined operation-plane images, as is recited by Applicants, among other features.

Accordingly, Applicant respectfully submits that Rafii and Kloba, taken alone or in combination, do not teach or fairly suggest at least the above-noted features as recited by Applicant. In view of the above, Applicant respectfully requests that the rejection be reconsidered and withdrawn.

The rejection of claim 8 under 35 U.S.C. 103(a) as being unpatentable over Rafii in view of Kloba and further in view of U.S. Patent No. 6,941,382 to Tuli (hereinafter "Tuli") has been rendered moot by the cancellation herein of claim 8 as noted above.

The rejection of claim 12 (as dependent from claims 4, 6 and 7) under 35 U.S.C. 103(a) as being unpatentable over Rafii in view of Kloba and further in view of U.S. Patent App. Pub. No. 2002/0075240 to Lieberman (hereinafter "Lieberman") is hereby traversed and reconsideration is respectfully requested in view of the amendments to the claims contained herein.

The features of independent claims 4, 6 and 7 are discussed above with respect to Rafii and Kloba. Claim 12 depends therefrom.

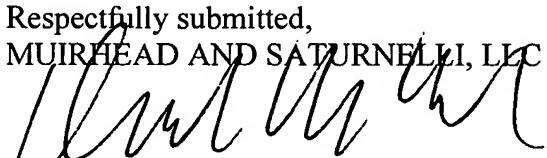
Lieberman discloses a virtual data entry device and method for input of alphanumeric and other data. The Office Action cites to Lieberman as disclosing features of use of a light source, a spatial light modulation unit and an optical system, as recited by Applicant in claim 12, citing specifically to paragraphs 0184, 0186, 0135 and Figs. 28 and 29 of Lieberman.

The rejection of claim 12 (as dependent from claim 8) under 35 U.S.C. 103(a) as being unpatentable over Rafii in view of Kloba and further in view of Tuli has been rendered moot by the cancellation herein of claim 8, as noted above.

Further, Applicant has added new claims 15-18 and, in accordance with the above-noted remarks, respectfully submits that these claims are also patentable over the cited prior art.

Based on the above, Applicants respectfully request that the Examiner reconsider and withdraw all outstanding rejections and objections. Favorable consideration and allowance are earnestly solicited. Should there be any questions after reviewing this paper, the Examiner is invited to contact the undersigned at 508-898-8603.

Respectfully submitted,
MUIRHEAD AND SATURNELLI, LLC


Donald W. Muirhead
Registration No. 33,978

Date: July 28, 2009

Muirhead and Saturnelli, LLC
200 Friberg Parkway, Suite 1001
Westborough, MA 01581
Phone: (508) 898-8601
Fax: (508) 898-8602